

**IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/525,132  
Applicant(s): Jean-Michel Lagrange, et al.  
Filed: February 16, 2005  
TC/A.U.: 2600/2624  
Examiner: Anthony M. Mackowey  
Atty. Docket: FR 020088  
Confirmation No.: 1955  
Title: Ultrasonic Imaging Apparatus with  
Adaptable Spatial Image Combination

**APPEAL BRIEF**

Honorable Assistant Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In connection with the Notice of Appeal dated September 29, 2008, Applicants provide the following Appeal Brief in the above-captioned application.

### **REAL PARTY IN INTEREST**

The owner of all rights, title and interest in the captioned application is:  
Koninklijke Philips Electronics, N.V. Groenewoudseweg, 1 Eindhoven, NL 5621 BA .

### **RELATED APPEALS AND INTERFERENCES**

There are no known related appeals or interferences at this time.

### **STATUS OF CLAIMS**

Claims 1-4 are all pending in the application.

Claims 5-9 are cancelled.

Accordingly, the claims on Appeal are claims 1-4, and are reproduced in the Appendix.

### **STATUS OF AMENDMENTS**

There are no pending amendments with respect to this application.

### **SUMMARY OF CLAIMED SUBJECT MATTER<sup>1</sup>**

#### **Referring to Claim 1:**

According to a representative embodiment, a method for combining ultrasonic images of the same object including the steps of: seeking contours (e.g., C[I], C[J] in Fig. 3) representing an interface on the ultrasonic images (e.g., IM[I], IM[J] in Fig. 3) to be combined, said search step being intended to define interest areas close to said representative contours; and analyzing interest areas (e.g., IA[I], IA[J] in Fig. 3). The

---

<sup>1</sup> In the description to follow, citations to various reference numerals, figures, and corresponding text in the specification are provided solely to comply with Patent Office rules. It should be understood that these reference numerals, figures, and text are exemplary in nature, and not in any way limiting of the true scope of the claims. It would therefore be improper to import anything into any of the claims simply on the basis of exemplary language that is provided here only under the obligation to satisfy Patent Office rules for maintaining an Appeal.

analysis step being intended to allocate weights (e.g., W[I], W[J] in Fig. 2) to the points in interest areas and to the points corresponding to the interest areas on the various ultrasonic images. The method also comprises constructing a combination image (e.g., IMc in Fig. 3). A point on the combination image (e.g., IMc in Fig. 3) corresponding to a point on at least one interest area (e.g., IA[I], IA[J], Fig. 3) being obtained from a weighting of the corresponding points on the ultrasonic images to be combined according to the weights allocated in said analysis step. (Kindly refer to page 6, line 20 through page 9, line 14; Figs. 2 and 3; and claim 1 of the pending application for additional details.)

### **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to be reviewed on Appeal are whether:

1. Claims 1-4 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Murthy, et al.* (US Patent 6,101,238) and *Entrekin, et al.* (WO 01/69282).

### **ARGUMENTS**

#### **1. Claims 1-4 are patentable over the applied art**

In addition to other requirements, a rejection for obviousness requires that all elements of a claim be found in the applied art. However, the use of hindsight is never proper in a rejection for obviousness. In *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727; 82 U.S.P.Q.2D 1385 (2007), the Court stated "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "guard against slipping into the use of hindsight" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332

F.2d 406, 412 (CA6 1964))).” Often, more than one reference is used in a rejection for obviousness. Such a combination cannot be based on hindsight, but rather must be properly motivated. To wit, if there is no suggestion to combine the teachings of the applied art, other than the use of Applicants’ invention as a template for its own reconstruction, a rejection for obviousness is improper. *Ex parte Crawford, et al.* Appeal 20062429, May 30, 2007. In furtherance to the need for the suggestion to combine the teachings of the applied art, it is established that rejections on obviousness grounds cannot be sustained by mere conclusory statements: instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int’l v. Teleflex*, 127 S. Ct. at 1741.

i. Claim 1

Claim 1 recites:

*A method for combining ultrasonic images of the same object including the steps of:*

***- seeking contours representing an interface on the ultrasonic images to be combined, said search step being intended to define interest areas close to said representative contours,***

*- analyzing interest areas, said analysis step being intended to allocate weights to the points in said interest areas and to the points corresponding to said interest areas on the various ultrasonic images,*

*- constructing a combination image, a point on the combination image corresponding to a point on at least one interest area being obtained from a weighting of the corresponding points on the ultrasonic images to be combined according to the weights allocated in said analysis step.*

a. Combination of references is improper

The Examiner relies on the teachings of *Murthy, et al.* for the alleged disclosure of most of the features of claim 1, conceding that the reference does not disclose ultrasound image processing. In fact, the reference is solely concerned with processing x-ray images and there is no teaching, suggestion or even mention of the application of the teachings of *Murthy, et al.* to any other imaging technology (e.g., NMR, MRI, PET) and especially application of its teachings to ultrasonic imaging.

Respectfully, as noted in *Ex parte Crawford, et al.* without the suggestion to combine the teachings except for the use of Applicants' claims as a template for their reconstruction, a rejection for obviousness is improper. Applicants respectfully submit that but for the use of their claims as a guide to rejection, there would be no basis for combining the teachings of *Murthy, et al.* with *Entrekin, et al.* Rather, Applicants proffer that the total and complete silence on the applicability of the teachings of *Murthy, et al.* to any other imaging technology may suggest that for reasons undisclosed in the reference, the teachings are not usefully applied to other than x-ray imaging. As such, Applicants respectfully submit that the combination of references is improper and the rejection is flawed as a result.

In the Advisory Action mailed on September 5, 2008, the Examiner asserts that "One of ordinary skill in the art at the time the invention was made would have had sufficient skill and creativity to modify the image combining method of *Murthy* to be applicable to combine ultrasound images with a reasonable expectation of success." Yet, Applicants note again that there is no reference to the application of *Murthy, et al.* to anything other than x-ray images. The Examiner provides a conclusory statement as to the foresight that one skilled in the art would garner from the teaching of *Murthy, et al.*, without evidence in support thereof. As noted above, it is established that rejections on obviousness grounds cannot be sustained by mere conclusory statements: instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Here the rational underpinning in support of the legal conclusion would be, for example, evidence that the teachings of x-ray imaging as

disclosed in *Murthy, et al.* would have been seen as applicable to ultrasonics and needed in ultrasonic imaging to one skilled in the art at the time of Applicants' invention. Stated differently, there is no objective evidence provided that to support the transplanting of the teachings of *Murthy, et al.* to ultrasonic imaging, and thus a rejection based on *Murthy, et al.* is improper.

b. *Murthy, et al.* fails to disclose at least one feature of claim 1

As noted above, claim 1 features:

*"...seeking contours representing an interface on the ultrasonic images to be combined, said search step being intended to define interest areas close to said representative contours..."*

The Office Action directs Applicants to columns 4 and 5 in nearly their entirety; and column 7, lines 8-18 of *Murthy, et al.* for the alleged disclosures of the features noted immediately above. Applicants have reviewed the noted portions of the applied art and respectfully submit that there is no disclosure or suggestion of seeking contours of an interface on ultrasonic images. Specifically, column 4 describes the function of an automatic background detector 110; and the detection and elimination of background regions during compound image generation. Column 5 describes a collimation detection filter and its function. Finally, the cited lines of column 7 relate to alignment of two images and the elimination of background imagery prior to alignment. However, nowhere in the approximately 120 lines of *Murthy, et al.* relied upon for the alleged disclosure of the captioned features of claim 1 is there a mention, yet alone a complete description, of the seeking contours representing an interface on ultrasound images to be combined and the defining of areas close to the representative contours.

c. Rejection is improper

For at least the reasons set forth above, Applicants submit that the rejection is flawed as because the combination of references is improper; and because the applied art

fails to disclose at least one feature of claim 1. Thus, claim 1 is patentable over the applied art. Moreover, claims 2-4, which depend from claim 1, are also patentable for at least the same reasons and in view of their additionally recited subject matter.

### **Conclusion**

In view of the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:  
Philips Electronics North America Corp.

/William S. Francos/

by: William S. Francos (Reg. No. 38,456)

Date: December 9, 2008

Valentine & Whitt, PLLC  
Two Meridian Blvd.  
Wyomissing, PA 19610  
(610) 375-3513 (v)  
(610) 375-3277 (f)

Appendix

**Claims on Appeal**



1. A method for combining ultrasonic images of the same object including the steps of:
  - seeking contours representing an interface on the ultrasonic images to be combined, said search step being intended to define interest areas close to said representative contours,
  - analyzing interest areas, said analysis step being intended to allocate weights to the points in said interest areas and to the points corresponding to said interest areas on the various ultrasonic images,
  - constructing a combination image, a point on the combination image corresponding to a point on at least one interest area being obtained from a weighting of the corresponding points on the ultrasonic images to be combined according to the weights allocated in said analysis step.
2. A method as claimed in claim 1, wherein the analyzing comprises a step of evaluating similarity of the interest areas on the ultrasonic images to be combined, the weights being allocated to the various points in said interest areas and to their corresponding points according to said similarity.
3. A method as claimed in claim 2, wherein the analyzing comprises a step of estimating the contrast within at least two interest areas present and similar on two images, the weights being allocated to the various points in said interest areas according to said estimated contrast.
4. A method as claimed in claim 2, wherein at least two ultrasonic images to be combined have different resolutions and the analyzing comprises a step of evaluating these resolutions within at least two interest areas present and similar on two said ultrasonic images, the weights being allocated to the various points in said interest areas on said two images according to said resolutions.

**Appendix**

**Evidence (None)**

**Appendix**

**Related Proceedings (None)**